

Environmental Accounting for People and Places

Software name:	Resources and Energy Analysis Programme (REAP)
Application:	Analysis of potential environmental impacts of policies and monitoring of policies over time
Current users:	Local, regional and national government in the UK, commercial users, academic users, and NGOs

Distribution: SEI provides a training session for consultancies and government agencies as part of any REAP software license. Footprint reports and detailed results can be downloaded for all 434 local authorities in the UK from our website. Regional and national data can also be downloaded from the site. (www.resource-accounting.org.uk)

Introduction

As a software tool, Resources and Energy Analysis Programme (REAP) is used to answer some of the most important questions related to understanding the environmental consequences of economic activity. These include:

- How do we account for the resource use associated with everything people buy and use?
- How do we track complex product supply chains?
- How do we calculate, attribute and report results in a consistent fashion?
- How do we relate this to populations at different spatial scales and over time?
- How do we explore where resource savings can be made both in production efficiency and consumption patterns?

The tool helps assess the potential environmental impact of policies and to monitor the actual impact of policies over time.

Our mission is to convert the best available science into tools and evidence that can be used in the policy-making process. The creation and development of REAP is underpinned by SEI's expertise in areas such as life cycle accounting and the measurement of embodied greenhouse gas emissions.

The software was developed as part of the Future Sustainability Programme at SEI York with WWF-UK and CURE alongside the report 'Counting Consumption UK'. The resulting report was the most comprehensive analysis yet attempted to track materials, carbon dioxide emissions and the Ecological Footprint through the UK economy by industrial sector, geographical area and socio-economic group.

REAP generates ecological, carbon and greenhouse gas (GHG) footprint results for the populations of every local authority area, English Region and devolved nation in the UK. This is modelled by combining data on the consumption of goods and services with their production impact through every stage of the supply chain. It provides baseline data which can be updated and monitored for:

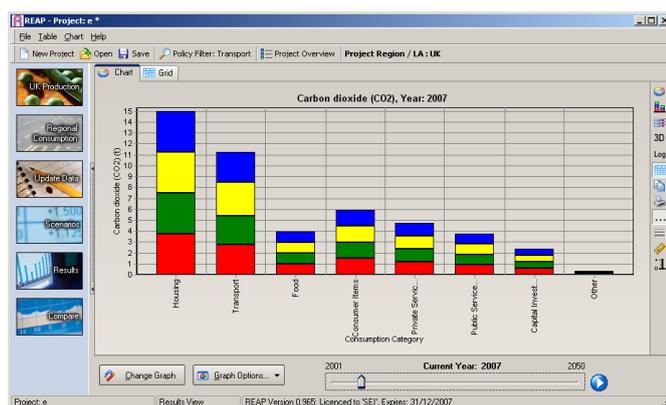
- carbon dioxide and other emissions of greenhouse gases;
- air pollutants and heavy metals; and
- the Ecological Footprint and material flows.

These indicators measure the impact of changes in the consumption activities of individuals and households within a specific geographical area. They take account of the domestic energy used by households and the way people travel as well as food consumption and what people buy and use.

Since its UK launch in February 2006, REAP has been used in a wide variety of policy applications and in over 50 projects. Approximately 20 local authorities are using REAP in their policy process, with over two thirds of all local authorities using the footprint data REAP provides. There has also been interest in developing the REAP methodology in Europe, Thailand, China, Canada and Australia.

Strategic focus

People's consumption activities are influenced by local, regional and national policy as well as geographical characteristics and social trends. These issues are assessed through the creation of scenarios. REAP's scenario editor can be applied to a wide range of policy areas including energy, transport, food, housing and planning.





The REAP scenario editor enables the user to look at issues in isolation or together for a single year or over time. In the UK, the scenario editor has for example been used to compare the environmental impact of a code for sustainable homes against other energy efficiency policies targeting existing housing. Other applications for the scenario editor are studying existing transport trends and testing whether improvements in fuel efficiency will offset growth in car use.

Area focus

The tool looks at geographical areas rather than organisations. It is designed to be used in local authority areas, regions and at a national level but can be adapted for use at the subregional or city-region level. As REAP looks at issues that fall outside the direct control of any one organisation, there is an emphasis on working in partnership within and between local authority areas and regions.

Lifecycle focus

REAP measures the environmental pressures associated with what people buy and use all the way through the supply chain. It calculates all the pressures associated with creating and providing a good or service to the final consumer.

A study performed by the SEI and the University of Sydney, found that CO₂ emissions from consumption in the UK were 21% higher than CO₂ emissions from production. This difference reflected the trade balance of the UK economy with the bulk of goods being imported. A similar study for Sweden found that Swedish consumer emissions are 17% higher than

Swedish producer emissions. Through the lifecycle focus, REAP shows how changes in people's behaviour have a global impact on the environment.

Policy impacts

The tool has been used at the regional level in particular to assess how the carbon and ecological footprint may change over time under a number of different scenarios. Scenarios are inherently uncertain, given the large number of variables possible and the interaction of different dynamics such as population, economics and cultural change. Even so, scenarios do have real, deliberative value and can be used to offer insight into the potential impact of policies during the decision making process. REAP has been specifically used to:

- Evaluate regional strategies in Yorkshire and Humber and the West Midlands;
- Create footprint reduction roadmaps for the South East and Wales;
- Support collaboration between Tees Valley and Greater Nottingham local authorities;
- Assess particular policies in relation to housing (Leeds City Region) and transport (Yorkshire and Humber);

Our project reports answer specific policy questions from a consumption perspective. They highlight the importance of taking into account supply chain impacts and placing a focus on the lifestyle impacts of residents.

User training

SEI provides a training session for potential users as part of a REAP software license agreement. Providing workshops and user support makes up around 30% of SEI's work with REAP. The existing workshop format introduces the concept of footprint analysis and takes workshop attendees through a variety of REAP-based group exercises. Some of the workshops have been for individual clients but SEI have also been funded to introduce REAP to potential users at the regional and local government level.



Published by:
Stockholm Environment Institute
University of York
Heslington, York,
YO10 5DD, UK
+44 1904 43 2897

www.sei.se

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Author: Alistair Paul
alistair.paul@sei.se
Further information:
Robert Watt
robert.watt@sei.se
+46 709 675808